

Bank Resolutions and the Costs of Resolution

During the 1980s, regulators faced not only an increase in the number of bank failures requiring resolution, but an increase in the average cost of resolving a bank. For the first 46 years of the Bank Insurance Fund, resolution costs, measured as losses to the fund, averaged about 2 percent of failed bank assets. The ratio of resolution costs to bank assets increased to 8 percent in the early 1980s and to about 17 percent between 1986 and 1990. Resolution costs as a percentage of failed bank assets dropped to 11 percent in 1991 and 1992, down from an average of more than 20 percent in 1987 and 1989, the peak years of the period.

The cost to the insurance fund of resolving a bank depends on the value of liabilities covered by deposit insurance and the value of assets that can be recovered during the resolution process. Covered liabilities include mostly insured deposits; uninsured deposits may also be handled by the Federal Deposit Insurance Corporation, depending on the kind of resolution transaction. The loss on assets--the difference between the book value of assets at the time of resolution and the net value that can be recovered if the assets are sold--is a major determinant of the cost of resolution. As the recoverable value of assets after resolution decreases, the cost of resolving an institution increases. The average loss on assets for resolved banks in the late 1980s was about 30 percent.¹ The cost of resolving banks dur-

ing this period severely depleted the insurance fund. As the drain on the insurance fund continued, recognition of bank insolvency and a timely exit policy for insolvent institutions became a critical part of regulatory efficiency.

Resolution Costs as Estimates of BIF Losses

Although banks must answer to different chartering and supervisory regulators at the state and federal level, each of which is charged with maintaining the safety and soundness of the banking system, only the FDIC has the responsibility of selecting a method of resolution that limits costs to the insurance fund. Methods for resolving banks can be divided into three general categories: payoffs and transfers, including liquidations; purchase and assumptions or various types of mergers; and assistance transactions to ongoing institutions, such as open-bank assistance.² (See Appendix B for a detailed discussion of the categories of resolution.)

The choice of a method of resolution is governed in large part by the FDIC's estimates of the potential costs to the insurance fund. The FDIC is required by law to perform a cost test for proposed methods of resolution. Before the Federal Deposit Insurance Corporation Improvement Act of 1991,

1. Richard A. Brown and Seth Epstein, "Resolution Costs and Bank Failures: An Update of the FDIC Historical Loss Model," *FDIC Banking Review*, vol. 5, no. 1 (Spring/Summer 1992), pp. 1-16.

2. Open-bank assistance includes all forms of financial assistance between the FDIC and an ongoing bank.

the cost test required only that the chosen method of resolution be no more costly to the insurance fund than a payout of insured depositors and liquidation of assets (payout and liquidation), which would be required to meet the FDIC's insurance obligation. Using this rule, the FDIC could select any feasible method of resolution as long as the cost test was satisfied. Under FDICIA, the FDIC is now required to consider all possible methods of resolution and choose the least costly alternative. Usually the FDIC estimates the cost of payout and liquidation as a base case and compares it with costs of alternative methods of resolution. The same techniques are used to calculate estimated costs for various methods of resolution, but the new rule changes the way in which the costs are compared.

Upon selecting the method of resolution, the FDIC provides an initial estimate of the resolution cost based on the experience of the FDIC staff in resolving many other failed banks. The estimate is not that of the full cost borne by all parties in the transaction, but an estimate of the loss to the BIF. That is, it is an initial estimate of how much the insurance fund will lose after the FDIC completes the resolution of the bank and the disposition of its assets. Estimates of losses require, at a minimum, that the FDIC appraise the market value of the assets and liabilities of the failed institution.

Insurance Costs and Methods of Resolution

Resolution cost estimates represent the present value of losses to the insurance fund and can be measured by an accounting identity that includes market-value assessments of the liabilities and assets and the administrative costs of resolution.³ The basic accounting identity is:

$$\text{Resolution Cost} = \text{Realized Liabilities} - \text{Realized Value of Assets} + \text{Administrative Costs}$$

The magnitude of this measure of cost depends on how *liabilities* are defined and the *realized value of*

assets assessed. These terms mean different things for different types of resolutions.

The way in which uninsured deposits are treated affects the size of realized liabilities. Realized liabilities in a liquidation by the FDIC may be limited to insured deposits; if the bank is acquired by another institution, however, realized liabilities could include a much broader set of liabilities. Different methods of resolution can be characterized by whether or not uninsured depositors are protected. In some resolution transactions, uninsured depositors must absorb their proportionate share of losses resulting from the closing of the failed bank. Common examples of resolutions in which uninsured depositors are not protected include insured deposit transfers and payouts. In other resolution methods, usually in the case of assumption transactions, uninsured deposits are protected against loss resulting from bank failure.⁴

Aside from the treatment of uninsured deposits, the treatment of assets can significantly affect the cost to the BIF of resolving a bank. In the case of a liquidation, the realized value of assets is simply the value recovered for assets after disposal. In the case of a merger, the total realized value of assets may also include a value for such intangibles as goodwill; that is, the franchise value of the ongoing entity that the acquirer is willing to pay to obtain the institution. Each method of resolution may handle failed-bank assets in as many as three ways. One way is to assign them to a receivership--the entity that discharges the legal obligation of a resolved institution. In this case the FDIC, as receiver, is responsible for collecting and disposing of these assets. Another way of handling assets is that some portion (or all) of the assets of a resolved bank may be assumed by the acquirer. In the third way, failed-bank assets are subject to a collecting pool or loss-sharing agreement. These assets are managed and collected by the acquirer on behalf of the FDIC. The acquirer generally receives management fees and in some cases enters into a loss-shar-

3. For this type of assessment, assets and liabilities include on- and off-balance-sheet activities.

4. In an effort to comply better with the least-cost test imposed by FDICIA, in 1992 the FDIC deviated from the traditional use of purchase and assumption in which all deposits are usually assumed by the acquiring institution. The new method of resolution is similar to the traditional purchase and assumption except that only insured deposits are transferred to the acquirer.

ing agreement with the FDIC. In an effort to reduce losses to the BIF, the FDIC attempts to keep failed bank assets under private control whenever feasible.

In practice, resolution costs are the difference between the initial disbursements that the FDIC makes to resolve a failed bank and the present value of the amount that the FDIC expects to recover on assets.⁵ Whether liabilities are transferred or involved in a payout, it is easy to see that the amount the FDIC is able to recover on assets of the failed bank to offset handling the liabilities is significant in determining the cost of resolution. Estimates of resolution costs are based on forward-looking procedures that include the length of time it will take to dispose of the assets of failed banks. Disposition of assets may take seven years or more depending on the type of resolution and the type of asset.⁶ The FDIC generates initial estimates of expected recoveries (and thereby, estimates of realized asset value) for each type of asset at the time of resolution and periodically updates these estimates until the asset is fully recovered or written off.⁷

Resolution Costs and Regulatory Effectiveness

If banks are resolved on the basis of market value when they first become insolvent—that is, when liabilities are just greater than the market value of assets—losses to the fund can be held roughly to the administrative costs required to process the resolu-

tion through the FDIC system. Most banks were closed when they became book-value insolvent—that is, when the book value of equity dropped to zero. Two FDIC studies found that the average loss on assets for resolved banks between 1985 and 1989 was about 30 percent.⁸ These results imply that the market value of assets to the FDIC was only about 70 cents per dollar of recorded book value by the time the resolution process began. Had the banks' problems been detected when the market value of assets was equal to liabilities and promptly resolved, perhaps some of the loss on assets could have been avoided.

One possible measure of the effectiveness of the overall regulatory process is the extent to which resolution costs exceed administrative costs. For purposes of analysis, *embedded losses* are defined as the amount of resolution costs above the costs that can be attributed to administrative expenses. Although administrative expenses are not reported separately by the FDIC in its estimates of total resolution costs, some industry analysts estimate that the administrative costs for small-to-moderate-sized banks during the 1980s were between 4 percent and 10 percent of assets.⁹ Using the higher figure of 10 percent, it is possible to generate a conservative estimate of embedded losses per dollar of assets at resolution. For the 1987-1992 period, approximately 80 percent of bank resolutions cost more than 10 cents per dollar of assets and therefore (using the above definition) had embedded losses. Roughly 28 percent of the resolutions in this period had costs per dollar of assets that exceeded 30 percent of assets, and more than 3 percent of these resolutions had costs that exceeded 50 percent of assets (see Figure 6). Data on earlier resolutions indicate that for the period between 1934 and 1979, total

5. The FDIC shares the proceeds of the sale of assets with other creditors. Its share is determined by the amount of the insured liabilities in relation to total liabilities of the bank at resolution.

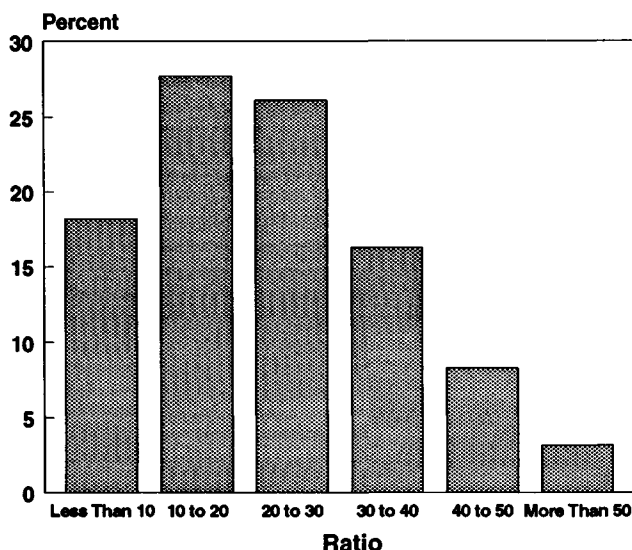
6. Brown and Epstein, "Resolution Costs and Bank Failures," pp. 1-16. This study presents data on the time distribution of asset recoveries for receiverships begun from 1986 through 1990. The data show that for such assets as securities and installment loans, most recoveries are made within one year of the receivership. Recoveries on commercial loans and mortgages tend to proceed less quickly.

7. Currently there is only one study that compares initial estimates of loss on assets with realized values manifested after resolution. See Brown and Epstein, "Resolution Costs and Bank Failures," pp. 1-16. This kind of information could be used to validate market-value formulas used at resolution.

8. See John F. Bovenzi and Arthur J. Murton, "Resolution Costs of Bank Failure," *FDIC Banking Review*, vol. 1, no. 1 (Fall 1988), pp. 1-13; and Brown and Epstein, "Resolution Costs and Bank Failures," pp. 1-16.

9. Christopher James, "The Costs of Resolving Bank Failures," *Journal of Finance* (September 1991), estimates that administrative costs average between 8 percent and 10 percent of failed bank assets. Conversations with George French, Associate Director of the Research and Statistics Division at the FDIC, in April 1992 corroborate James's findings. James Thompson, Assistant Vice President of the Federal Reserve Bank of Cleveland, disagrees with this figure and suggests that administrative costs are closer to 4 percent of assets.

Figure 6.
Distribution of Resolved Banks
Grouped by Ratios of Resolution Costs
to Bank Assets, 1987-1992



SOURCE: Congressional Budget Office based on data from the Federal Deposit Insurance Corporation.

resolution costs per dollar of assets exceeded 10 percent only five times. By contrast, total losses per dollar of resolved bank assets between 1980 and 1992 exceeded 10 percent in every year except for two.¹⁰

The fact that losses were on average higher in the 1980s than they were in the previous period may indicate diminished regulatory effectiveness. It is likely that two factors could have contributed to diminished effectiveness. First, examiners may not have been able to identify potential failures early enough to permit regulators to avoid additional losses because of the uncertainties involved in identifying insolvency and the overwhelming number of banks that failed over a short period. Second, examiners may have identified severely undercapitalized banks, but either practiced forbearance or were unable to elicit compliance through supervision.

Resolution Costs and Early Detection

From the inception of deposit insurance, it was commonly accepted that bank examination--monitoring the financial condition of banks--and supervision and oversight could prevent bank failures (see Box 1). In an industry of more than 14,000 banks in which fewer than 12 banks failed each year over a period of 46 years, there was no evidence to the contrary.

By 1973, however, financial analysts began to change their attitudes toward bank examination. They argued that examinations should be aimed only at detecting insolvency and protecting the insurance fund against losses, not at preventing bank failures.¹¹ One study in 1980 argued that, "The appropriate purpose of bank examination, then, is the detection of insolvency, so that a bank can be closed before its losses exceed the amount of its capital."¹² Subsequent analysis of bank failures during the 1980s reveals that losses often exceeded capital for resolved banks. It is hard to know the degree to which insolvent banks escaped detection or regulators detected severe problems but refrained from closure until banks were clearly insolvent.

Problems Determining Economic Viability. For unregulated businesses, market-value insolvency occurs when a firm is unable to meet its financial obligations. Creditors issue lawsuits and bankruptcy petitions are filed. The court appoints a conservator to oversee either restructuring or liquidation. Insolvency is legally defined in this context and is measurable (at least after the fact). It is more difficult to determine insolvency in a regulated industry in which firms are declared insolvent by a regulator. In fact, in some instances, regulators are clearly motivated to keep an insolvent institution operating, and in some cases, they have no choice. This became obvious during the height of the thrift crisis when insolvent institutions were allowed to remain open, partly because there were no funds available

10. See Federal Deposit Insurance Corporation, *Failed Bank Cost Analysis: 1985-1990* (1992); and Federal Deposit Insurance Corporation, *1992 Annual Report* (1993).

11. George Benston, "Bank Examination," Reprint Series No. C-16, (Center for Research in Government Policy and Business, University of Rochester, Rochester, N.Y., 1973).

12. Paul Horvitz, "A Reconsideration of the Role of Bank Examination," *Journal of Money, Credit, and Banking*, vol. 12, no. 4 (1980), p. 656.

to resolve them. At the same time, however, some savings and loans had themselves declared insolvent by the courts.

In economic terms, insolvency occurs only when the market value of liabilities exceeds the market value of assets; that is, when the firm is no longer economically functional. Put another way, insolvency occurs when a firm's expected discounted revenue stream is negative for the indeterminate future. Unfortunately, there is no univer-

sally accepted procedure for determining the market value of assets and liabilities for a bank without selling the assets in the market. This lack of a procedure makes an economic assessment of the market valuation of assets disputable and subject to many assumptions. The standard system of book-value accounting, based on value at the last transaction, can hide the true value of assets. An insolvency test based on book-value accounting can be misleading because it may disguise an insolvent institution as book-value solvent.

Box 1.

The Basics of Bank Regulation and Examination

State or federal chartering agencies regulate banks from the time they apply for a charter until they close and their last deposits are transferred or repaid. Both federal and state government agencies control entry into the industry, as well as the location and operation of banks. A state chartering agency or comptroller of the currency can charter a bank. When assessing a new charter, the regulatory authority considers such things as the initial capital position of the bank, a community's need for a bank, and the bank's potential for success, given the economy in which it will operate. In exercising their chartering responsibilities, the comptroller and state banking commissioner regulate both entry and exit.

Commensurate with their chartering responsibilities for operating a safe and sound banking system, regulatory agencies monitor bank operations by reviewing detailed financial statements that all banks must file quarterly. Examiners conduct on-site audits and examinations. The criteria for safety and soundness require monitoring to identify financially weak institutions. By law there are overlapping jurisdictions between federal and state regulatory authorities. Regulators adhere to the following breakdown of responsibilities for bank examinations:

- o Comptroller--all national banks;
- o Federal Reserve--state-chartered banks that are members of the Federal Reserve;
- o Federal Deposit Insurance Corporation--state-chartered banks that are not members of the Federal Reserve; and

- o State agencies--all state-chartered banks.

Bank examiners consider a bank's financial condition, review its compliance with laws and regulations, and study its prospects for the future. Examiners try to identify emerging financial problems by checking capital adequacy (C), asset quality (A), management practices (M), earnings (E), and liquidity (L). The so-called CAMEL rating is a numerical index (from 1 to 5) based on an examiner's assessment of these categories and is used to identify problem banks that may require supervisory action. Bank examiners assign an index of 4 or 5 to banks that they regard as operating under unsatisfactory conditions. Examiners report to regulators who may demand that institutions increase capital, alter current loan policies, or increase loan loss reserves to cover loans that are highly likely to default. Regulators may remove management if necessary and ultimately force resolution.

Once examiners and regulators determine that a bank has problems, regulators act jointly with the institution to eliminate the need for resolution or request a timely resolution. During the 1980s, before the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA), the appropriate state chartering agency or the Office of the Comptroller of the Currency would authorize the Federal Deposit Insurance Corporation to resolve a failed bank. The FDIC could petition the chartering agency to request a resolution, but this was a time-consuming process. With the advent of FDICIA, the FDIC may now initiate resolution procedures.

Although examiners can usually judge which banks are financially distressed, determining when a bank first becomes insolvent is very difficult. The process of classifying a bank as economically incapable of surviving before it reaches book-value insolvency is fraught with uncertainty. Regulators can make two kinds of errors in classifying a bank as insolvent: they may classify a bank that is really functional as insolvent. Conversely, they may classify a bank that is really insolvent as functional.

In the history of the insurance fund, the two errors have not been equally important. Since 1934, regulators have rarely resolved a bank that was solvent by book-value measures. During the 1980s, regulators usually preferred to err on the side of leaving a financially distressed bank operating rather than close a functional bank. The costs associated with behaving as if a bank is functional when it is not can appear eventually as embedded costs that show up as relatively high resolution costs per dollar of assets. The costs of the first type of error--classifying a bank as inoperable when it was not--would be associated with litigation and other costs of premature closing. In the 1987-1991 period, only one institution--the Southeast Bank of Florida--was closed before it was book-value insolvent.¹³ The costs of resolving Southeast Bank proved to be minimal--only 3 percent of tangible assets (see Appendix A, which discusses methods of evaluating the financial condition of banks).

During the 1980s, regulators faced legal and economic pressures to avoid closing a bank before it became book-value insolvent.¹⁴ To close such institutions meant that the regulators would have had to endure immediate vocal disapproval from those directly affected--owners of banks, boards of directors, local communities, and their representatives. Beneficiaries of timely closures were conspicuously silent and typically unaware of the costs of regulatory delay.¹⁵ Not surprisingly, regulators were hesi-

tant to close banks before they became book-value insolvent. In most cases, it appears that regulators preferred to wait until "the death rattle was clearly audible."¹⁶

The evidence suggests that examiners and regulators during the 1980s may have been genuinely uncertain about whether the banking problems stemmed simply from temporary liquidity troubles or more substantial difficulties related to economic insolvency. Even after a resolution, examiners can only estimate the extent of embedded losses and are often unable to pinpoint when the losses first occurred. Most of failed bank losses are associated with bad loans, but when did the loans become "bad"? Were these loans poor to begin with, or did bad loans only become bad when they became nonperforming? Looking back, it is clear that banks priced the loans poorly, required insufficient collateral, and neglected to diversify risk adequately. Before actual failure, however, the book-value accounting method did not serve regulators well because they did not see what was coming until it was too late.

Approximately 13 percent of the banks that failed from 1987 to 1992 had equity-to-asset ratios exceeding 6 percent at the end of the year before they were resolved (see Figure 7). These banks were reasonably capitalized by book-value measures. Regulators were most likely surprised when a significant percentage of these seemingly well-capitalized banks failed. In the 1985-1991 period, the FDIC resolved about 140 banks that examiners had rated at the beginning of the year as being in good condition--as either a CAMEL 1, 2, or 3 (see Box 1).¹⁷ The FDIC clearly had not expected these

13. Southeast Bank was resolved September 19, 1991. The estimated loss was \$350 million. Data supplied by Jeff Taylor of the FDIC, January 10, 1992.

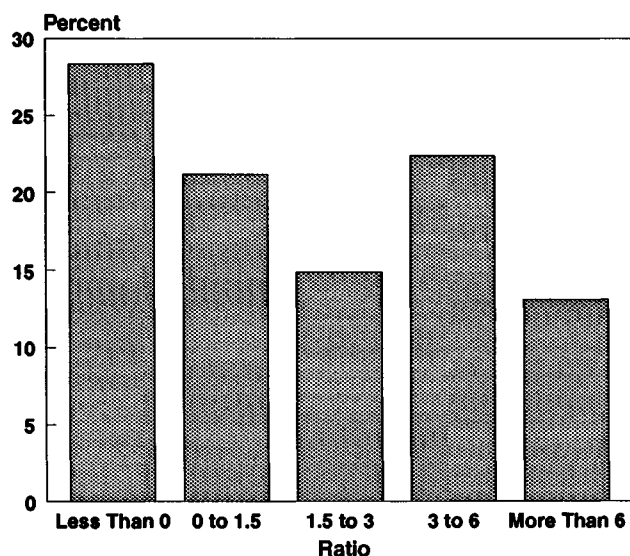
14. Federal Deposit Insurance Corporation, *Deposit Insurance for the Nineties: Meeting the Challenge* (1989).

15. James R. Barth, Philip F. Bartholomew, and Carol Labich, "Moral Hazard and the Thrift Crisis: An Analysis of 1988 Resolutions," Research Paper 150 (Federal Home Loan Bank Board, May 1989); and Congressional Budget Office, "The Cost of Forbearance During the Thrift Crisis," CBO Staff Memorandum (June 1991).

16. L.J. Davis, "The Problem with Banks? Bankers: Bad Loans, Not Bad Laws, Created the Current Crisis," *Harpers* (June 1991), pp. 45-53.

17. CBO is grateful for data supplied by George French, Associate Director, Division of Research and Statistics, FDIC. Data on CAMEL ratings are not available for individual institutions. Only summary data on CAMEL ratings are provided by the FDIC.

Figure 7.
Distribution of Resolved Banks Grouped
by Equity-to-Asset Ratios, Observed at the
End of Year Before Resolution, 1987-1992



SOURCE: Congressional Budget Office based on data from the Federal Deposit Insurance Corporation.

institutions to require resolution. Even among banks designated as "problem" banks by the FDIC, there are different expectations of failure based on the designated CAMEL rating. Institutions rated as CAMEL 4 are not expected to fail with as high a likelihood as those with a CAMEL rating of 5.

Examiners Were Overwhelmed. In addition to the problems that regulators may have been uncertain about when institutions became insolvent, regulators may simply have been overwhelmed by the events of the 1980s. In the context of new financial instruments and the greater latitude afforded banks by deregulation in the early 1980s, regulators may have been unable to keep up with the technological changes caused by deregulation and increased competition in the industry. Examiners may not have been able to act swiftly enough to monitor and control excessive risk-taking by undercapitalized banks until it was too late. Moreover, examination staffs were being reduced just before the period in which

the numbers of problem banks and failures were growing.¹⁸

In 1978, for example, the FDIC employed more than 1,700 field examiners. At the time, there were approximately 350 problem banks and seven failures. By 1984, after several years of staff cutbacks, the number of examiners had declined to about 1,400, but the number of problem banks had grown to more than 900. Yearly resolutions increased to more than 100. By 1988, field examiners had increased to 2,029, but more than 1,000 were relatively inexperienced. Meanwhile, the number of problem banks increased to 1,400 and resolutions approached 200 per year.

Turnover rates for experienced staff increased among regulatory agencies. The demand for examiners expanded from those dealing with banking agencies to those charged with monitoring thrifts. Approximately 2,000 thrifts failed during the same time period. Clearly, the frequency of examinations, given staff turnover and limitations, had to suffer at the very time the industry was undergoing major stress. Insufficient and inexperienced examiners and an increase of time between examinations may have contributed to delays in detecting insolvent banks.

Resolution Costs and Regulatory Behavior

Before hearing the "death rattle," regulators often granted capital forbearance—permission for an undercapitalized bank to continue operating without requiring recapitalization. Although not every undercapitalized bank was a likely candidate for resolution, all were unquestionably candidates for increased regulatory oversight and supervision. Regulators have the authority to force banks to raise eq-

18. The reduction in bank and thrift examiners in the 1980s was consistent with the Administration's policy at the time to reduce the regulatory role of government. See John O'Keefe, "The Texas Banking Crisis: Causes and Consequences, 1980-1989," *FDIC Banking Review*, vol. 3, no. 2 (Winter 1990), pp. 1-34, for a description of how staff reductions contributed in part to the banking crisis in Texas.

uity, suspend dividends, reduce assets, issue new stock, force divestiture of affiliates, remove directors or managers, demand increased allowances for loan losses, or charge off uncollectible loans. Enforcing such actions on these undercapitalized banks may have caused even more failures. It is not difficult to imagine why many banks were initially permitted to continue to operate. In many cases, regulators decided not to enforce supervisory actions, presumably because they felt there was a higher probability that these banks would survive than that they would fail.

Forbearance. Forbearance comes into play when bank supervisors decide not to enforce some regulations, including capital requirements, under special circumstances.¹⁹ In theory, a policy of forbearance gives economically functional banks--those that may be undergoing a short-term liquidity crisis--time to adjust to market conditions without triggering otherwise applicable bank regulations. Some forbearance policies are implicit, such as the treatment of banks designated for the FDIC problem banks list. Thus, problem banks are given time to comply with various supervisory actions intended to correct operational deficiencies.

Other policies of forbearance are explicit. For example, as losses on agricultural and energy loans rose during the 1980s, in the Competitive Equality Banking Act (CEBA) of 1987, the Congress "mandated capital forbearance" for agricultural banks--those banks with more than 25 percent of assets devoted to the agricultural sector. One condition for entry into the program was a formal plan (recognized by the bank's directors) for restoring the capital-to-asset ratio to the regulatory minimum of 5.5 percent. Regulatory supervisors stipulated that banks in the forbearance program limit growth of total assets and high-risk investments, restrict dividends to shareholders, and limit insider loans during forbearance.²⁰

In practice, forbearance was granted to banks that turned out to be incapable of surviving. Approximately 63 percent of the banks that the FDIC resolved between 1985 and 1989 were considered undercapitalized for more than a year before failure. Approximately 28 percent of bank resolutions between 1987 and 1992 were insolvent by book-value measures at least one year before their resolution. Based on the resolution costs per dollar of assets during the 1980s, it is reasonable to suspect that forbearance could have contributed to the increased costs of resolution. If the losses were already embedded, however, the costs of resolution need not have increased.

A measure of the success or failure of a policy of forbearance can be obtained by examining how well regulators were able to restrict the activities of undercapitalized banks. One study examines a sample of 531 undercapitalized banks between 1985 and 1989 that were permitted to remain undercapitalized for at least one year.²¹ Although regulators were able to restrict the majority of banks from engaging in questionable activities, regulators did not have complete control. For example, while they were undercapitalized, 16 percent of these banks increased assets by more than 10 percent, 15 percent continued to pay dividends, and 24 percent reported high levels of insider loans. Clearly, dividend payments and insider loans contributed to an increase in resolution costs for those institutions that did not recover.

FDICIA and Prompt Corrective Action

The Federal Deposit Insurance Corporation Improvement Act of 1991 authorizes a policy of "prompt corrective action" by bank supervisors in dealing with financially weakened banks. In FDICIA, the kind of prompt corrective action that is required of regulators depends on how a bank is rated in terms of minimum prescribed capital levels.

19. R. Alton Gilbert, "Supervision of Undercapitalized Banks: Is There a Case for Change?" in Federal Reserve Bank of Chicago, *Rebuilding Banking: Proceedings from the 27th Annual Conference of Bank Structure and Competition*, May 1-3, 1991, p. 338.

20. Dean Forrester Cobos, "Forbearance: Practices and Proposed Standards," *FDIC Banking Review* vol. 2, no. 1 (Spring/Summer 1989), pp. 20-28.

21. Gilbert, "Supervision of Undercapitalized Banks," p. 335. Gilbert defines undercapitalized banks as those exhibiting primary capitalization of less than 5.5 percent.

The act defines five levels of capital that trigger mandated levels of regulatory scrutiny--namely, well capitalized, adequately capitalized, undercapitalized, significantly undercapitalized, and critically undercapitalized. For example, if a bank is found to be undercapitalized, the law says it must develop a capital restoration plan that would include plans to meet capital requirements and restrictions on activities until capital has been restored. Under FDICIA, the FDIC may take action to resolve institutions when tangible equity-to-asset ratios slip below 2 percent.

But the concepts of "early" and "timely" closure should not be confused. In practice, if resolutions had been more timely--that is, before embedded losses drove the market value to zero without being revealed by measures of book value--some asset deterioration could have been eliminated and the cost to the insurance fund reduced. If banks suffer embedded losses before the 2 percent threshold is

reached, cost savings from early closure of the resolution may be minimal. If banks only suffer embedded losses after reaching the 2 percent threshold, savings may be substantial. The amount of savings to the insurance fund under early closure depends on (1) how well book-value measures approximate market values, and (2) how long the losses realized at resolution are actually embedded in the book value of assets before resolution of an undercapitalized bank. Some banks may degenerate quickly. Others may suffer losses over a long period before resolution. Using a simulation model to quantify the results of timely resolution for banks resolved in 1990, savings can amount to as much as 59 percent of resolution costs if the embedded losses occurred within a year of closure (see Appendix C).

The speed of erosion in book-value capitalization is one indicator of a bank's deterioration (see Table 7). The average bank that was resolved in

Table 7.
Average Equity-to-Asset Ratios of Banks Before Resolution by
the Federal Deposit Insurance Corporation, 1987-1992 (In percent)

Year Bank was Resolved by the FDIC	Equity-to-Asset Ratios					
	Year of Resolution	One Year Before Resolution	Two Years Before Resolution	Three Years Before Resolution	Four Years Before Resolution	Five Years Before Resolution
1987	2.2	n.a.	n.a.	n.a.	n.a.	n.a.
1988	1.7	5.9	n.a.	n.a.	n.a.	n.a.
1989	-0.4	4.9	7.2	n.a.	n.a.	n.a.
1990	0.5	5.0	7.6	9.9	n.a.	n.a.
1991	1.4	6.0	7.7	8.8	12.7	n.a.
1992	0.5	3.5	6.5	7.4	8.4	10.6

SOURCE: Congressional Budget Office analysis based on data supplied by the Federal Deposit Insurance Corporation and W.C. Ferguson and Company.

NOTES: Sample of banks includes banks resolved over the 1987-1992 period, with data available on assets at the end of 1986 and continuing through the year of resolution.

Averages are unweighted and computed using a sample of banks with consistent data for all years. In each row, the group of banks includes only those banks resolved in the year displayed.

FDIC = Federal Deposit Insurance Corporation; n.a. = not applicable.

1990, for example, had a book equity-to-asset ratio of almost 10 percent at the beginning of 1987, three years before resolution. By early 1988 the equity-to-asset ratios had declined but still appeared to be respectable, exceeding 7 percent. By 1989, however, the ratio had slipped to 5 percent, and finally, by 1990, the ratio had dropped to 0.5 percent--barely solvent by book-value measures. In many cases, with the notable exception of 1991 resolutions, equity-to-asset ratios for the average resolved bank were below the regulatory minimum one year before failure, thus requiring some regulatory action. It is also true that while the equity-to-asset ratios were declining on average for banks resolved during this period, the most significant deterioration occurred in the year before resolution. This may indicate rapid erosion of equity or regulatory action requiring an enumeration of bad assets.

The main rationale for a policy of early closure is that a fixed-rate deposit insurance system can tempt banks to take excessive risks at the expense of the insurance fund. But a policy shift in terms of supervisory actions has occurred under FDICIA. Whereas regulators tried in the past to avoid closing healthy banks by waiting for book-value insolvency (the death rattle), FDICIA mandates that regulators take that risk by applying an early closure rule. The goal is to prohibit banks from operating at very low levels of capital--considered to be the region of highest moral hazard. Critics of the early closure rule argue that unless regulatory supervision and oversight keeps banks from taking excessive portfolio risks before reaching the 2 percent level, they will simply gamble sooner than they would have otherwise.²² Nevertheless, effective supervision and oversight should limit losses. FDICIA also empha-

sizes early intervention as part of a policy of prompt corrective action, requiring increasing levels of supervision at lower levels of bank capital.

Rigid adherence to the 2 percent closure rule, however, may force the resolution of solvent banks that are merely undergoing a temporary crisis. It is difficult to assess the costs of mistaken early resolutions, given that regulators up to this point did not close banks before book-value insolvency. Two 1991 studies indicate that most banks that were undercapitalized between 1985 and 1989 did not recover.²³ One of these studies reports that only 24 percent of the undercapitalized banks recovered in the period examined. That study concludes that the prompt closing of banks with low but positive capital ratios "would not result in premature closings of large numbers of banks that ultimately would recover if given enough time."²⁴ To reduce the likelihood of incurring costs under premature closures, it may be useful to employ a flexible set of criteria in which early closures are limited to banks that are also displaying other characteristics of economic decay, such as earnings losses in consecutive years or failure to comply with regulatory recommendations.

22. Mark E. Levonian, "What Happens if Banks Are Closed Early," in Federal Reserve Bank of Chicago, *Rebuilding Banking: Proceedings of the 27th Annual Conference on Bank Structure and Competition*, May 1-3, 1991, pp. 273-295.

23. See George E. French, "Early Corrective Action For Troubled Banks," *FDIC Banking Review*, vol. 4, no. 2 (Fall 1991), p. 12; and Gilbert, "Supervision of Undercapitalized Banks," p. 345.

24. Gilbert, "Supervision of Undercapitalized Banks," p. 346.